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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/802,240	03/17/2004	Paolo Cavassini	BUG5-36500	5144

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EXAMINER	
SASAN, ARADHANA	

ART UNIT	PAPER NUMBER
1615	

NOTIFICATION DATE	DELIVERY MODE
04/22/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/802,240	CAVASSINI ET AL.	
	Examiner	Art Unit	
	ARADHANA SASAN	1615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 February 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-49,52 and 55-59* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-49, 52 and 55-59* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Status of Application

1. The remarks, amendments, and Request for Continued Examination filed on 02/10/09 are acknowledged.

2. Claims 50-51 and 53-54 were cancelled. Claims 1 and 52 were amended.

3. Claims 1-49, 52 and 55-59 are included in the prosecution.

Continued Examination under 37 CFR 1.114

4. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 02/10/09 has been entered.

Response to Arguments

Rejection of claims under 35 USC § 103(a)

5. Applicants' arguments, see Pages 10-12, filed 02/10/09, with respect to the following rejections have been fully considered and are persuasive.

- Rejection of claims 1-8, 22-40 and 46-56 under 35 U.S.C. 103(a) as being unpatentable over Iijima et al. (US 4,948,589) in view of Riga et al. (US 6,174,890)

- Rejection of claims 9-14 and 57-59 under 35 U.S.C. 103(a) as being unpatentable over Iijima et al. (US 4,948,589) in view of Riga et al. (US 6,174,890) and further in view of Richardson (US 6,797,291)
- Rejection of claims 15-19 and 41-42 under 35 U.S.C. 103(a) as being unpatentable over Iijima et al. (US 4,948,589) in view of Riga et al. (US 6,174,890) and further in view of Brommelsiek et al. (US 5,766,668)
- Rejection of claims 20-21 and 43-45 under 35 U.S.C. 103(a) as being unpatentable over Iijima et al. (US 4,948,589) in view of Riga et al. (US 6,174,890) and further in view of Richardson (US 6,797,291) and Brommelsiek et al. (US 5,766,668)

Therefore the rejections of 08/18/08 are withdrawn.

However, upon further consideration, a new ground(s) of rejection is made over Iijima et al. (US 4,948,589) in view of Spires (US 4,394,377) and further in view of Ito et al. (US 6,299,912 B1)

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 1-8, 22-40, 46-49, 52 and 55-59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iijima et al. (US 4,948,589) in view of Spires (US 4,394,377) and further in view of Ito et al. (US 6,299,912 B1).

The claimed invention is a composition of matter for feeding to a ruminant. The composition is a pellet comprising particles compressed together via pelletization. Each of the particles contain choline chloride to be administered in a rumen-protected and post-ruminally effective form. Each particle comprises a core which contains choline chloride and a protective coating surrounding the core which provides effective protection of the choline chloride from ruminal activity while allowing effective release of the choline chloride into the post-rumen portion of the digestive tract of the ruminant. The core mainly consists of choline chloride in the form of a dry, crystalline powder and, in combination, the protective coating surrounding the core comprises an outer, continuous layer mainly consisting of carnauba wax and an inner, continuous layer consisting of a hydrophobic substance selected from the group consisting of vegetable oils, hydrogenated vegetable oils, stearic acid and mixtures thereof. The inner layer provides effective protection of the choline chloride from moisture.

Iijima teaches a granular composition containing choline for a ruminant. The granular composition is “capable of reaching an abomasum and downstream thereof substantially in the form of granules, without easily dissolved or decomposed in the rumen” (Col. 2, lines 3-9). Choline chloride is a preferable choline derivative (Col. 2, lines 45-46). Hydrophobic agents such as hydrogenated palm oil, hydrogenated soybean oil, stearic acid, and carnauba wax are disclosed as binders and overcoating agents for the granules (Col. 3, lines 34-40 and lines 50-56). It is also disclosed that the granular composition may contain “any ingredients conventionally used in the animal feed, especially for a ruminant” (Col. 4, lines 9-15). The choline chloride is powdered

since the particle size is disclosed. "Cholines having an average particle size of 100μm or less … and a maximum particle size of 150μm or less … are granulated with excipients and hydrophobic binders" (Col. 4, lines 18-27). The particle size of choline chloride is achieved by grinding in an appropriate grinder (Col. 4, lines 42-46). Granulation methods such as fluidized granulation and agitation granulation are disclosed (Col. 5, lines 44-53). "… When the agitation granulation is used, relatively spherical or round granulated particles, which are suitable for subsequent coating, can be advantageously obtained … the fluidizable binder is migrated to the surface of the granules during the granulation to form a surface layer. As a result, the cholines and other powder to be protected is relatively located in the inside portion of the granules" (Col. 5, lines 54-64). The resultant granules have a particle size of 0.5 to 2.5mm (Col. 6, lines 49-51). The choline granules "are overcoated with a thin film by adding 20 to 40 parts, preferably 20 to 30 parts by weight, of a molten mixture, … of a hydrophobic overcoating agent and a solubility modifier …" (Col. 6, line 67 to Col. 7, line 6). "When the dissolution test of Example 1 was carried out with respect to the inner granules of Example 1 in which the overcoating was not applied, the dissolution rate in the rumen solution was 99%. As a result, the choline chloride was substantially completely dissolved in a rumen corresponding solution. Thus, when the coating is not applied, the desired resistance is not obtained" (Col. 9, lines 44-52).

Iijima does not expressly teach the overcoating of the choline chloride comprising an outer layer of carnauba wax and an inner layer of a hydrophobic substance or pelletization of the choline chloride composition.

Spires teaches a composition that comprises choline in the form of pellets and pelleted feeds (Col. 13, lines 10-25). The finished feed product comprising choline may be mixed with cattle feed components that are particularly suited for ruminants (Col. 14, lines 34-49).

Ito teaches a preparation for administration to animals (including cattle) and a feed containing the preparation (Col. 1, lines 14-18 and lines 48-49). Ito teaches that pelletization of feed materials involves heating or pressurization, active ingredients such as L-ascorbic acid 2-phosphoric ester salt are degraded under these conditions, and that "the depletion efficiency" of the active ingredient "must be restrained to the minimum limit" (Col. 2, lines 25-59). The preparation of the active ingredient is coated with a digestible and a non-hydrophilic coating agent (Col. 3, lines 46-50). The preparation is suitable for administration to ruminants (Col. 4, lines 3-16). Examples of non-hydrophilic covering agents such as hydrogenated vegetable fats and carnauba wax are disclosed (Col. 5, lines 1-17). Feed materials obtained by blending the coated active ingredient preparation with feed raw material and pelletization into feed pellets is disclosed (Col. 6, lines 36-67). Table 1 discloses the active material with a coating where “the compound with “coating” is obtained by coating an ascorbic acid phosphoric ester salt with carnauba wax using a conventional method” (Col. 10, lines 1-4).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to make a composition of choline chloride for ruminants with choline chloride in the core, coated with hydrophobic materials such as carnauba wax and hydrogenated oils, as suggested by Iijima, combine it with the pelletized feed

composition for ruminants comprising choline, as taught by Spires, in view of the use of carnauba wax coating on a cattle feed preparation that undergoes pelletization (involving heating and pressurization), as taught by Ito, and produce the instant invention.

One of ordinary skill in the art would do this because the use of choline in ruminant feed pellets is known in the art, as evidenced by Spires, and Ito teaches that carnauba wax is used as an outer coating of the ruminant feed preparation core undergoing pelletization (which involves heating and pressurization). One of ordinary skill in the art would have a reasonable expectation of success in producing a functional pelletized ruminant feed material comprising a core of choline chloride coated with hydrogenated vegetable oil, and further coated with carnauba wax.

From the teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole was *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

Regarding instant claim 1, the limitation of a composition of matter for feeding to a ruminant would have been obvious over the ruminant composition, as taught by Iijima (Col. 2, lines 3-9), in view of the feed pellets for ruminants comprising choline, as taught by Spires (Col. 13, lines 10-25 and Col. 14, lines 34-49), and further in view of the cattle feed pellets, as taught by Ito (Col. 6, lines 36-67). The limitation of the composition as a pellet comprising particles compressed together via pelletization would have been

obvious over the feed pellets for ruminants comprising choline, as taught by Spires (Col. 13, lines 10-25 and Col. 14, lines 34-49), and further in view of the cattle feed pellets, as taught by Ito (Col. 6, lines 36-67). The limitations of each of the particles containing choline chloride to be administered in a rumen-protected and post-ruminally effective form would have been obvious over the granular composition that is "capable of reaching an abomasum and downstream thereof substantially in the form of granules, without easily dissolved or decomposed in the rumen", as taught by Iijima (Col. 2, lines 3-9). The limitation of the core mainly consisting of choline chloride in the form of a dry, crystalline powder and, in combination, the protective coating surrounding the core comprises an outer, continuous layer mainly consisting of carnauba wax and an inner, continuous layer consisting of a hydrophobic substance selected from the group consisting of vegetable oils, hydrogenated vegetable oils, stearic acid and mixtures thereof would have been obvious over the choline chloride in the core of the granule (Col. 2, lines 45-46) and hydrogenated palm oil, hydrogenated soybean oil, stearic acid, and carnauba wax as the overcoating agents for the granules, as taught by Iijima (Col. 3, lines 34-40 and lines 50-56) in view of the carnauba wax coating taught by Ito (Col. 10, lines 1-4). The limitation of the inner layer providing effective protection of the choline chloride from moisture would have been obvious over the pelletized feed preparation taught by Ito that undergoes heating or pressurization, as taught by Ito (Col. 2, lines 25-59).

Regarding instant claims 2-4, the limitation of micronized choline chloride would have been obvious over the Iijima teaching of ground choline chloride and particle size

of 150μm (Col. 4, lines 18-27). One of ordinary skill in the art would grind the choline chloride and vary the particle size in the composition in order to optimize the rumen protection.

Regarding instant claims 5-6, the limitation of choline chloride percentage in the core would have been obvious over the Iijima teaching of 40% to 70% by weight of choline chloride in the granules (Col. 2, lines 47-52). One of ordinary skill in the art would vary the amount of choline chloride in the core during routine experimentation, in order to optimize the efficacy of the coated composition. The recited percentages are obvious variants unless there is evidence of criticality or unexpected results.

Regarding instant claims 7-8, and 39-40, the limitations of the core comprising additional substance, particularly a flow modifier, would have been obvious over the teaching of Iijima where talc is used in the core composition along with choline chloride (Col. 8, Example 1 Granulation, lines 32-36). Talc is known as a flow modifier in the art.

Regarding instant claims 22-26, the percentages of the additional substances in the core would have been obvious over the teaching of Iijima (Col. 8, Example 1 Granulation, lines 32-36). The percentages are obvious variants unless there is evidence of criticality or unexpected results.

Regarding instant claims 27-28, the percentages of the core weight with respect to the whole particle would have been obvious over the teaching of Iijima (Col. 8, Example 1 Granulation, lines 32-36). One of ordinary skill in the art would vary the

percentage of core with respect to the coatings during the process of routine optimization.

Regarding instant claims 29-30, the percentages of the carnauba with respect to the outer layer would have been obvious over the carnauba wax coating taught by Ito (Col. 10, lines 1-4). Since Ito does not disclose other ingredients in this coating, one of ordinary skill in the art would use 100% carnauba wax in the outer layer and would vary the percentage of carnauba wax with respect to the outer layer during the process of routine optimization.

Regarding instant claims 31-38, the limitations of a rigidity-controlling agent mixed with carnauba wax would have been obvious over the teaching of Iijima. Iijima teaches hydrogenated palm oil, hydrogenated bean oil, hydrogenated coconut oil, stearic acid, carnauba wax etc. as hydrophobic binders (Col. 3, lines 34-40). One of ordinary skill in the art would find it obvious to combine the lower melting hydrogenated vegetable oils with the higher melting carnauba wax in order to control the rigidity of the coating layer. One of ordinary skill in the art would know that the rigidity of the outer coating layer is primarily provided by the higher melting carnauba wax, and by adding a lower melting point component (such as a hydrogenated vegetable oil) would modify the rigidity of the outer coating layer. The percentages of the rigidity-controlling agent would be obvious variants unless there is evidence of criticality or unexpected results.

Regarding instant claims 46-49, the limitations of outer coating percentage and inner coating percentage would have been obvious over the hydrogenated palm oil, hydrogenated soybean oil, stearic acid, and carnauba wax as the overcoating agents for

the granules, as taught by Iijima (Col. 3, lines 34-40 and lines 50-56) in view of the carnauba wax coating taught by Ito (Col. 10, lines 1-4).

Regarding instant claim 52, the limitation of the hydrophobic substance would have been obvious over the teaching of hydrogenated palm oil taught by Iijima (Col. 3, line 35).

Regarding instant claims 55-56, the percentage of the protective coating with respect to the whole particle would have been obvious over the overcoating "with a thin film by adding 20 to 40 parts, preferably 20 to 30 parts by weight, of a molten mixture, … of a hydrophobic overcoating agent and a solubility modifier …" as taught by Iijima (Col. 6, line 67 to Col. 7, line 6) and because the percentage of the protective coating would be varied during the process of routine optimization of stabilizing choline chloride in the rumen.

Regarding instant claim 57, the limitation of a feed pellet would have been obvious over the pelleted feed comprising choline, as taught by Spires (Col. 13, lines 10-25) in view of the feed pellets disclosed by Ito (Col. 6, lines 36-67).

Regarding instant claim 58, the limitation of a premix for feed would have been obvious over the premix taught by Spires (Col. 13, lines 10-14) and by the premix taught by Ito (Col. 5, lines 38-43).

Regarding instant claim 59, the limitation of a mash feed in unpelleted form would have been obvious over the composition in the form of pastes and liquid feeds as taught by Spires (Col. 13, lines 20-25).

8. Claims 9-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iijima et al. (US 4,948,589) in view of Spires (US 4,394,377) and further in view of Ito et al. (US 6,299,912 B1) and Richardson (US 6,797,291).

The teachings of Iijima, Spires and Ito are stated above.

Iijima, Spires and Ito do not expressly teach silicates as flow modifiers.

Richardson teaches compositions for stabilizing a hygroscopic bioactive substance, such as choline chloride and also providing adequate rumen protection in ruminant feeds (Abstract). The choline chloride is encapsulated "with a lipid coating in an amount sufficient to retain at least about 60 wt % of the hygroscopic ingredient after the encapsulated ingredient is combined with the moist composition for a time period of at least about 1 day; and … combining the encapsulated hygroscopic ingredient with the moist composition" (Col. 3, lines 41-47). The hygroscopic ingredient can be choline chloride (Col. 3, line 48). The moist composition is a ruminant feed (Col. 3, lines 54-55). Hydrogenated vegetable (soybean) oil is the preferred lipid for coating (Col. 3, lines 64-65). Hydrogenated vegetable oil can be mixed with lesser amounts of wax (Col. 3, line 66 to Col. 4, line 5). It is further disclosed that, "skilled practitioners also recognize that flow agents, such as finely-divided silica, can be admixed with the particles of the invention to facilitate handling" (Col. 10, lines 11-13).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to make a composition of choline chloride for ruminants with choline chloride in the core, coated with hydrophobic materials such as carnauba wax and hydrogenated oils, as suggested by Iijima, combine it with the pelletized feed

composition for ruminants comprising choline, as taught by Spires, in view of the use of carnauba wax coating on a cattle feed preparation that undergoes pelletization (involving heating and pressurization), as taught by Ito, and further in view of the use of silica as a flow agent, as taught by Richardson, and produce the instant invention.

One of ordinary skill in the art would do this because Richardson teaches, "skilled practitioners also recognize that flow agents, such as finely-divided silica, can be admixed with the particles of the invention to facilitate handling" (Col. 10, lines 11-13).

Regarding instant claims 9 and 10, the limitations of silicate and aluminosilicate would have been obvious over the sodium aluminosilicate teaching of Richardson (Col. 4, lines 6-11). Richardson teaches "the encapsulates can contain additives whose role is to facilitate the implementation of the techniques for preparing these encapsulates or to improve the physicochemical characteristics … if included, these additives generally represent only a few percent by weight of the coating" (Col. 9, lines 46-62).

Regarding instant claim 11, the flow modifiers including silica would have been obvious over the silica teaching of Richardson (Col. 10, lines 11-13).

Regarding instant claims 12-14, the percentage of flow modifier would have been obvious over the Richardson teaching that "these additives are typically added in the range of 1 to 30 percent by weight" (Col. 9, lines 61-62).

9. Claims 15-19 and 41-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iijima et al. (US 4,948,589) in view of Spires (US 4,394,377) and further in view of Ito et al. (US 6,299,912 B1) and Brommelsiek et al. (US 5,766,668).

The teachings of Iijima, Spires and Ito are stated above.

Iijima, Spires and Ito do not expressly teach stearates as binders acting as moisture barriers in the core composition.

Brommelsiek teaches a choline feed stock precursor having greater than about 80-wt% of choline chloride, a lubricating agent, and an excipient (Abstract). Lubricants such as stearate salts are added to the spray drying system (Col. 7, lines 17-25). "The lubricant may be added during processing in concentrations which range from about 0 to 10 wt-% of the finished product …" (Col. 7, lines 26-27). "The ratio of calcium stearate to choline chloride may range from about 0.01 to 1 to about 0.06 to 1" (Col. 7, lines 46-49).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to make a composition of choline chloride for ruminants with choline chloride in the core, coated with hydrophobic materials such as carnauba wax and hydrogenated oils, as suggested by Iijima, combine it with the pelletized feed composition for ruminants comprising choline, as taught by Spires, in view of the use of carnauba wax coating on a cattle feed preparation that undergoes pelletization (involving heating and pressurization), as taught by Ito, use of silica as a flow agent, as taught by Richardson, and use lubricants such as stearate salts, as taught by Brommelsiek, and produce the instant invention.

One of ordinary skill in the art would do this because Brommelsiek teaches that inclusion of stearate salts as lubricants is "useful in producing a stable choline product

… this constituent assists in providing lubricity to the system during spray-drying and preventing deliquescence of the final composition" (Col. 4, lines 40-45). Since choline chloride is known in the art to be hygroscopic, using stearates to prevent the hygroscopic nature of the coated core of choline chloride would have been obvious to one of ordinary skill in the art. Even though Brommelsiek teaches spray drying liquid choline chloride, the end result is still a powdered choline chloride and lubricants are added to prevent deliquescence.

Regarding instant claims 15-19 and 41-42, the limitation of the binder and the percentage of binder acting as a moisture barrier in the core would have been obvious over the teaching of Brommelsiek that 0-10% of lubricant can be used in the composition (Col. 7, lines 26-27). One of ordinary skill in the art would vary the percentage during the process of routine experimentation.

10. Claims 20-21 and 43-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iijima et al. (US 4,948,589) in view of Spires (US 4,394,377) and further in view of Ito et al. (US 6,299,912 B1), Richardson (US 6,797,291), and Brommelsiek et al. (US 5,766,668).

The teachings of Iijima, Spires, and Ito are stated above.

Iijima, Spires, and Ito do not expressly teach silicates as flow modifiers or stearates as binders acting as moisture barriers in the core composition.

The teachings of Richardson (with respect to silicates) and Brommelsiek (with respect to stearates as binders) are stated above.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to make a composition of choline chloride for ruminants with choline chloride in the core, coated with hydrophobic materials such as carnauba wax and hydrogenated oils, as suggested by Iijima, combine it with the pelletized feed composition for ruminants comprising choline, as taught by Spires, in view of the use of carnauba wax coating on a cattle feed preparation that undergoes pelletization (involving heating and pressurization), as taught by Ito, further use silica as a flow agent, as taught by Richardson, and use lubricants such as stearate salts, as taught by Brommelsiek, and produce the instant invention.

One of ordinary skill in the art would do this because Richardson teaches silica as a flow agent and Brommelsiek teaches lubricants such as stearates to reduce the hygroscopic nature of encapsulated choline chloride which has an impact on ruminant feed storage and stability.

Regarding instant claims 20-21, 43-45, the limitations of percent choline chloride in the core, percent of flow modifier silica, percent of calcium stearate, percent of protective coating (outer and inner layers), and final particle size would have been obvious over the teachings of Iijima (Col. 6, line 67 to Col. 7, line 6), Riga (Col. 33, lines 38-50), Richardson (Col. 10, lines 11-13), and Brommelsiek (Col. 7, lines 26-27). One of ordinary skill in the art would vary the levels of the components and coatings in order to optimize the stability of the choline chloride in the rumen. The percentages and particle sizes recited are obvious variants unless there is evidence of criticality or unexpected results.

Conclusion

13. No claims are allowed.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aradhana Sasan whose telephone number is (571) 272-9022. The examiner can normally be reached Monday to Thursday from 6:30 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Woodward, can be reached at 571-272-8373. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Aradhana Sasan/
Examiner, Art Unit 1615

/MP WOODWARD/
Supervisory Patent Examiner, Art Unit 1615